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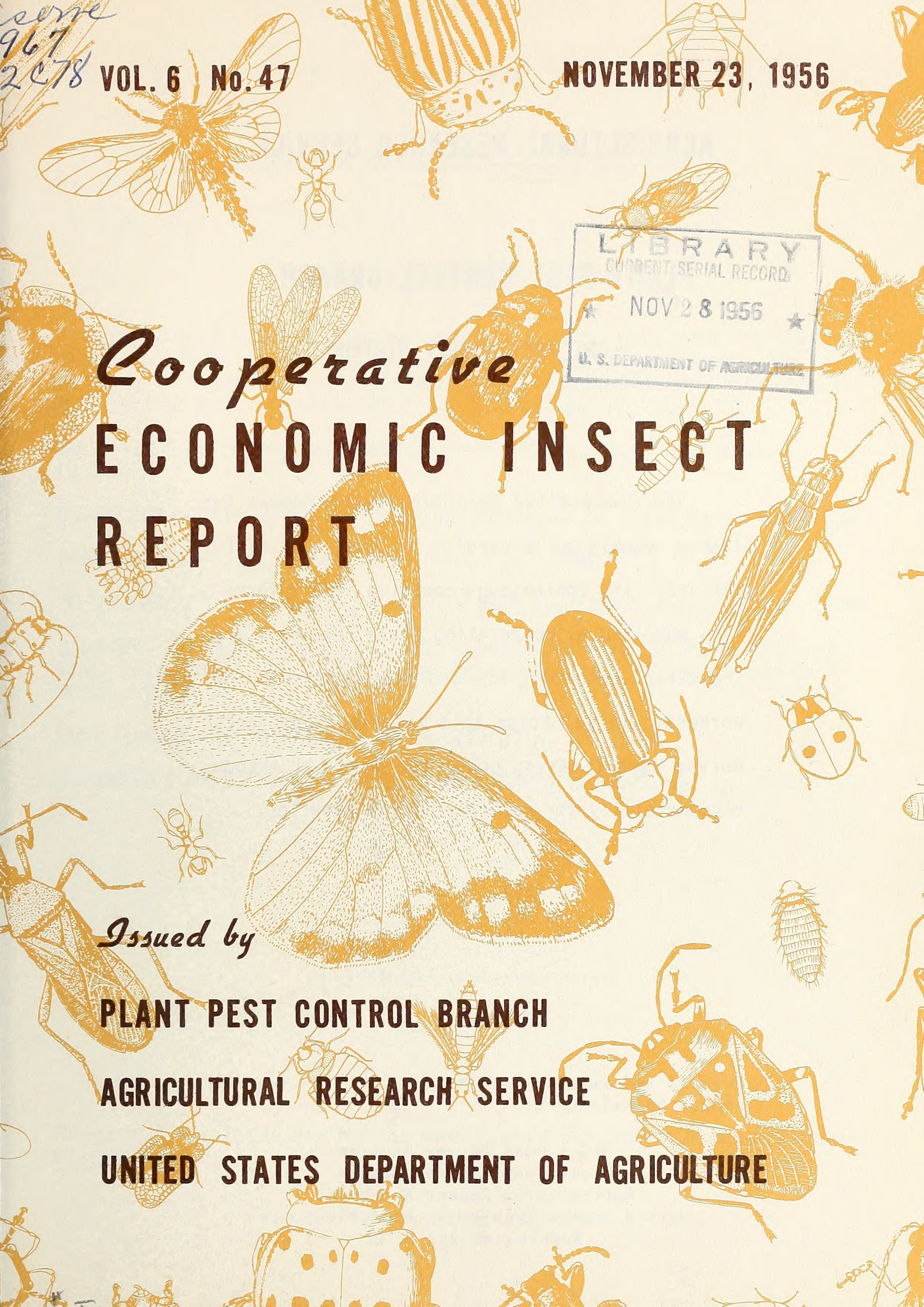

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U. S. DEPARTMENT OF AGRICULTURE

Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL BRANCH

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL BRANCH

PLANT PEST SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

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Plant Pest Survey Section
Plant Pest Control Branch
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

Volume 6 November 23, 1956 Number 47

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

SPOTTED ALFALFA APHID reported from Wisconsin for first time. Becoming more widespread in areas of Arizona and still heavy in sections of Nebraska. Disease increasing in aphids in this State and this control factor reported on from California. (pp. 1067, 1071).

PEA APHID continues very abundant in alfalfa in Nebraska areas. (p. 1067).

SWEETCLOVER APHID collected in Wisconsin for first time. (p. 1068).

PINK BOLLWORM inspection reports. (p. 1069).

GYPSY MOTH expected to be heavier next year in Connecticut. (p. 1069).

A SAWFLY (Arge scapularis), which defoliated elms in Pierce County, Wisconsin during the summer, has been identified. First record for State. (p. 1070).

Distribution map of the ALFALFA WEEVIL. (p. 1073).

SUMMARY OF INSECT CONDITIONS - 1956 - in Alabama. (p. 1074).

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Reports in this issue are for the week ending November 16 unless otherwise designated.

WEATHER BUREAU'S 30-DAY OUTLOOK

Mid-November to Mid-December 1956

The Weather Bureau's 30-day outlook for the period from mid-November to mid-December calls for temperatures to average below seasonal normals over most of the nation except for above normal in West Coast States and in the Northern Plains. Greatest departures are indicated in states bordering the Gulf of Mexico. Precipitation amounts in excess of normal are expected along the Gulf Coast and Atlantic Seaboard. Subnormal amounts are predicted west of the Continental Divide and in the upper Mississippi Valley. In other areas about normal precipitation is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook", published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D.C. Price $4.80 a year, $2.40 for six months.

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WEATHER FOR THE WEEK ENDING NOVEMBER 19, 1956

Snows in the Northern and Central Rocky Mountain and Plain States, the upper Great Lakes region and New England and freezing temperatures, which occurred on at least 1 day in interin areas except in most extreme southern sections, were prominent weather features this week. Frontal systems which moved into the extreme Northwest late in the last period and again on Saturday caused considerable fluctuations in temperature. The first of these systems marked the leading edge of the cold air which brought a record minimum of 17° for the day at Prescott, Arizona and sub-zero values to mountain areas of Idaho, Wyoming and Colorado on the 15th, and a -11° at Ladelle, South Dakota, on the following day. At the same time the southerly flow ahead of the system brought record daily maxima to stations in Connecticut and Rhode Island, and warming to the entire eastern-half of the country. Here, in the East, weekly temperatures averages were generally above normal as they were along the Canadian Border as far west as central Montana. Average temperature departures ranged from as much as 6° below normal in Arizona to as much as 6° above in Massachusetts.

These two systems were also responsible for the heavy snowfalls of the week. The first brought up to 12 inches in Minnesota, 13 inches in Wisconsin, 3 inches in northern Pennsylvania, and 6 inches in the middle Hudson Valley of New York while New England reported its first moderate to heavy snowstorm of the season over the weekend with falls of 1 to over 6 inches. The second system, now extending north-south through the center of the country, has already brought a snow cover of 4 to 6 inches from southeastern Wyoming to western Iowa, and falls to 12 inches were reported in eastern Colorado. Snow depths continue to increase at higher elevations with Washington observing snow covers as low as 1500 feet in the Cascades, and depths of 30 inches and 45 inches at 3,000

Weather continued on p. 1076.

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - CALIFORNIA - As a result of adult surveys, an estimated 1,100,000 acres of land will have economic populations in 1957, requiring an estimated 650,000 acres of control activity. Counties with potentials for infestations of particular economic importance during 1957 are as follows: Alpine, Butte, Calaveras, El Dorado, Humboldt, Kern, Kings, Monterey, Nevada, San Benito, San Diego, San Luis Obispo, Shasta, Siskiyou and Tehama. (Cal. Coop. Rept.).

BROWN WHEAT MITE (Petrobia latens) - UTAH - Fall population lower than usual due to late storms and lack of fall wheat growth. (Knowlton). OKLAHOMA - Nymphs and adults up to 20 per linear foot of row in areas of Kingfisher County and none noted in surrounding counties. (Coppock).

FALL ARMYWORM (Laphygma frugiperda) - LOUISIANA - With an occasional larva of Pseudaletia unipuncta, larvae continue to be taken from oats and barley in East Baton Rouge, East Feliciana and Livingston Parishes. (Oliver).

APHIDS - WYOMING - Very heavy infestation on red clover in Park County and causing concern due to difficulty in harvesting seed crop with heavy honeydew deposits. (Spackman, Nov. 1). NORTH CAROLINA - Local spotty infestations killing oats in Pender, Sampson and Duplin Counties. (Scott).

ALFALFA WEEVIL (Hypera postica) - MARYLAND - Survey of seven alfalfa fields in Frederick County showed adults average 4.5 per ten sweeps and larvae 3.0 per ten sweeps. Light damage by small larvae to new growth. (U. Md., Ent. Dept.).

PEA APHID (Macrosiphum pisi) - UTAH - Has survived snows and freezing weather in northern counties. (Knowlton). MARYLAND - Averaged 3-12 per sweep on alfalfa in Frederick County. (U. Md., Ent. Dept.). NEBRASKA - Still very abundant in Platte and Republican Valleys. In northeastern area, counts 110-300 per sweep. (Hill, Andersen).

SPOTTED ALFALFA APHID - ARIZONA - Building up in some alfalfa fields in Yuma area and declining other fields. Becoming more widespread than at end of summer. In almost all alfalfa fields, appearing suddenly many cases. Winged forms proportionately high in most fields. Newly-planted alfalfa not as severely attacked as in 1954. Hippodamia convergens prevalent in infested areas now but expected to be reduced by cold weather. Lacewings, mainly Chrysopa plorabunda and damsel bugs, Nabis ferus and fewer N. alternatus apparently very important in control of the aphid. (Ariz. Coop. Rept.). UTAH - Survived snows and freezing weather in northern counties. (Knowlton). ILLINOIS - Infestations dropping off rapidly due to cold weather. (Ill. Ins. Rept.). OKLAHOMA - No aphids in alfalfa fields in Major, Kingfisher, Blaine, Canadian and Oklahoma Counties. (Coppock). VIRGINIA - Favorable weather for build-up. One field in Montgomery County with 30 per 100 sweeps. Infestations in Grayson and Carroll Counties. (Morris). NEBRASKA - Populations through

Republican and Platte Valleys varied and spotted. Abundant on new growth with much honeydew present, and some fields with black appearance. Many fall-seeded fields still with high populations. In northeastern counties, populations static with counts 25-100 per sweep. Many predators. In Platte and Republican Valleys, and northwestern area, large numbers aphids dying from disease. (Hill, Andersen). LOUISIANA - Populations remain low in alfalfa in northwestern area. Heavy populations of predators include *Hippodamia convergens*, *Chrysopa oculata*, *Nabis ferus* and syrphid flies. (Oliver). TEXAS - Light infestations in alfalfa in Wharton, Matagorda and Colorado Counties. (Turney). WISCONSIN - First identification of specimens in Wisconsin on Nov. 7 from collections made in Rock County about Nov. 1. (Smith).

SWEETCLOVER APHID (*Myzocallidium riehmi*) - WISCONSIN - Specimens from Crawford County, Nov. 2. (Smith). As far as known, first record for State.

TARNISHED PLANT BUG (*Lygus lineolaris*) - OKLAHOMA - Up to 18 per ten sweeps in scattered fields of Blaine and Major Counties. (Coppock). NEBRASKA - Counts averaged eight per sweep in northeastern area. (Andersen). LOUISIANA - Populations continue to build up on several alfalfa fields in Bossier and Caddo Parishes. (Oliver).

A TREEHOPPER (*Vanduzea triguttata*) - NORTH CAROLINA - Six to eight per stem causing moderate leaf drop on lespedeza in local area of Lee County, Sept. 27. Det. L.M. Russell. (Cope).

FRUIT INSECTS

SAN JOSE SCALE (*Aspidiotus perniciosus*) - CALIFORNIA - A heavy build-up in Sutter County, reported killing some peach trees. (Cal. Coop. Rept.).

MEXICAN FRUIT FLY (*Anastrepha ludens*) - MEXICO - During October, 688 traps were operated on 274 properties and 2755 trap inspections made with one fly taken October 1 in Tijuana. The thirty-second spray was completed at Tijuana, the thirty-fifth at Ensenada, and the seventeenth at Tecate. In Baja California area, 2291 trees were sprayed on 2478 properties. (So. Reg., PPC, Oct. 1-31).

TRUCK CROP INSECTS

SEED-CORN MAGGOT (Hylemya cilicrura) - OKLAHOMA - Level of leaf infestations of spinach rose slightly during October 25 to November 14 in the Bixby area with 16 percent and seven percent of plants infested with eggs and larvae respectively. (Walton, Hensley).

SOUTHERN BEET WEBWORM (Pachyzancla bipunctalis) - OKLAHOMA - Populations declining from 30 to 15 larvae per 100 plants on spinach from October 25 to November 14. (Walton, Hensley).

STRAWBERRY LEAF ROLLER (Ancylis comptana fragariae) - NORTH CAROLINA - Moderate infestation over entire field in Columbus County. (Raper, Rabb).

COTTON INSECTS

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - In San Joaquin Valley, 3545 bushels of gin trash inspected and 6885 green bolls examined showed no infestation. To date, 13,282 bushels of gin trash and 39,215 mature green bolls have been examined during the harvest season in San Joaquin Valley with no infestations found. (Cal. Coop. Rept., Nov. 9). OKLAHOMA - Populations in western third of the State averaged lower this year than in 1955 while populations in central and eastern portions were slightly above normal. (Bower, Howell). During October, inspections of 1408 bushels of gin trash showed 7042 larvae. In August, September and October, 124 lint cleaner inspections showed 410 larvae, 228 gin stand inspections showed 1313 larvae and 893 green bolls from 12 fields showed six of the fields infested. During same period, 422 dry boll showed three infested with six larvae. (Bower). In Lincoln County, ten larvae were found on two gin stands; 71 larvae on lint cleaners at one gin stand in Choctaw County and 21 larvae found at one gin in Bryan County. (Vick). One larvae found on lint cleaner in Kiowa County. (Hatfield).

Pink Bollworm Situation in Eight Southern and Southwestern States: Type, number of inspections and results in eight states: 16,784 gin trash with 11,473 larvae; 1054 lint cleaner inspections with 40,970 larvae; 228 gin stand inspections with 1313 larvae; and 10,084 boll inspections with 3588 larvae. All larvae found were in regulated areas of Texas, Oklahoma, Arkansas and Louisiana and results in Tennessee, Alabama, Mississippi and South Carolina were negative. (So.Reg., PPC, Oct. Rept.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

GYPSY MOTH (Porthetria dispar) - CONNECTICUT - Preliminary scouting shows that the heavily-infested area is about double the size found in 1956. Heavy infestation on 50,000 acres indicated. (Johnson, Turner).

A SCALE (Matsucoccus resinosae) - CONNECTICUT - Infestations on red pine in Fairfield County have increased in radius by about five miles since last survey in 1953. (Johnson).

A SAWFLY (Arge scapularis) - WISCONSIN - First record for State from Pierce County where larvae were defoliating elm trees in July. Farthest west reported. (Smith).

LEAF CRUMPLER (Acrobasis indigenella) - NORTH CAROLINA - Local infestation on pyracantha in New Hanover County. (Scott, Rabb).

INSECTS AFFECTING MAN AND ANIMALS

MOSQUITOES - VIRGINIA - Encephalitis, a mosquito-borne disease, reported in one animal on each of 4 farms in Essex County, one on each of 5 farms in King George County, one animal in Lee County and one in Princess Anne County during September. (Va. Livestock Health Bul.). NORTH CAROLINA - Aedes sollicitans biting at 250 per square foot in 10 minutes in Beaufort County and breeding from Stumpy Point in Dare County to Engelhard in Hyde County. Heavy increase in light traps on Outer Banks in Dare County and increasing in New Hanover and Brunswick Counties, due to rains and flooding. Severe increase in all coastal areas expected unless checked by frosts. (Cromroy).

SCREW-WORM (Callitroga hominvorax) - LOUISIANA - Case in a dog in East Feliciana Parish. (Oliver).

CATTLE GRUBS - OKLAHOMA - Survey of carcasses of undetermined origin in an Oklahoma City slaughtering house averaged the following grubs per animal: 17 in 95 calves; 1.4 in 47 cows. In Payne County, 128 yearling steers averaged 19 grubs per animal. (Coppock).

CATTLE LICE - UTAH - Control underway several counties with 1500 head dipped at Nephi and others at Callio. (Knowlton).

SHEEP BITING LOUSE (Bovicola ovis) OREGON - Heavily infesting two flocks of sheep in Linn County. (Goulding, Nov. 9).

ITCH MITES - ALABAMA - Severe infestations in farm house on farm near Auburn. Individual with hive-like eruptions over entire body with headaches and fever following exposure to mites. (Owen).

STICKTIGHT FLEA (Echidnophaga gallinacea) - NORTH CAROLINA - Heavy infestation in a flock of chickens in Washington County. (Jones, Farrier).

STORED PRODUCTS INSECTS

RICE WEEVIL (Sitophilus oryza) - TEXAS - Medium local infestations with undetermined grain moths in stored wheat in Deaf Smith County. (Clearman).

CADELLE (Tenebroides mauritanicus) - MARYLAND - Moderate in stored barley and oats, Washington County. (U. Md., Ent. Dept.).

ANGOUMOIS GRAIN MOTH (Sitotroga cerealella) - MARYLAND - Heavy in 2-year-old ear corn and light in stored barley and oats, Washington County. (U. Md., Ent. Dept.).

Stored Grain Insect Situation, Oklahoma: In ten bins of 1956 wheat in Blaine County, a survey, using a five foot probe showed infestations per quart of grain as follows: SAW-TOOTHED GRAIN BEETLE in seven bins, RICE WEEVIL in one, RED FLOUR BEETLE in two and LESSER GRAIN BEETLE in four. A similar survey of 12 bins of 1956 wheat in Kingfisher County showed SAW-TOOTHED GRAIN BEETLE in one bin, RICE WEEVIL in four, RED FLOUR BEETLE in three and FLAT GRAIN BEETLE in two. (Coppock).

MISCELLANEOUS INSECTS

EUROPEAN EARWIG (Forficula auricularia) - UTAH - Serious infestation found one home at Ogden. (Knowlton).

OLD HOUSE BORER (Hylotrupes bajulus) - MARYLAND - Larvae infesting wood of house, Baltimore County. (U. Md., Ent. Dept.).

MILLIPEDES - MARYLAND - Troublesome in homes in Montgomery and Baltimore Counties. (U. Md., Ent. Dept.). VIRGINIA - Entering homes and buildings in Warwick and Charlottesville. (Sedivy, Scott).

A CLOTHES MOTH (Tinea bisselliella) - NORTH CAROLINA - Moderate infestation in rugs at furniture dealer in Rockingham County. (Scott, Rabb).

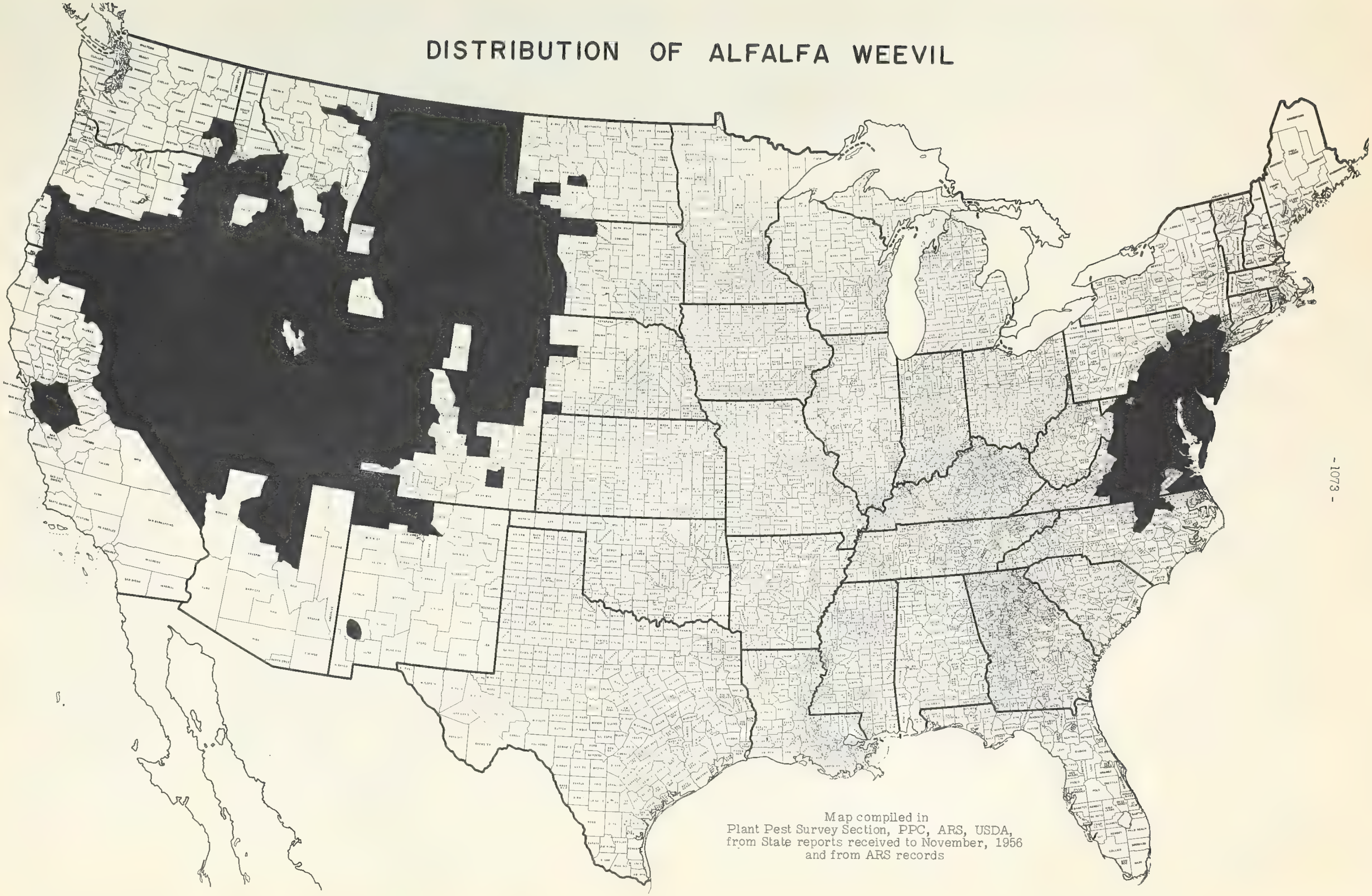
ADDITIONAL NOTES

CALIFORNIA - Pathogenic species of fungi continued to show ability as biological agents against spotted alfalfa aphid in many areas. Spread by natural means aided by artificial distribution programs in which about 1800 cultures were placed in infested fields in 12 counties, has resulted in widespread control of the aphid by the fungi in counties where no diseases were observed during the spring and early summer. The fungi showed ability to become distributed quite rapidly throughout a field and to reappear when aphid build-up starts after a lengthy host-free period. (Pest Cont. Rev., U. of Cal. Ext. Serv.).

LIGHT TRAP COLLECTIONS

	Pseud.	Agrotis	Prod.	Perid.	Feltia	Heliothis		Laphyg.	Protoparce	
	unipun.	ypsilon	ornith.	marg.	subt.	zea	viresc.	frugip.	sexta	quinq.
TEXAS										
Waco 11/3-9	54			19		13				
College Station 11/12	3	2								
Winter Haven 11/1-15	55	11	11	7		181		2		
LOUISIANA										
Curtis 11/5-12	14	20	2		9	6				
Baton Rouge 11/12-16	7	17	2		40	1				
Franklin 11/8-15	2	8	5		10			6		
TENNESSEE(Counties)										
Madison 11/6-12	2	13				16		8		
Maury	16	29	6			26		13		
Robertson	64	122	4			46		16		
Cumberland	38	100	1			52		1		
Knox	21	13	3			2		13		
Greene	71	11	4			30				
Blount	9	11	2			21		21		
Johnson	92	18	10			29		28		
ALABAMA(Counties)										
Lee 11/2-8	31					28		14		
Baldwin 10/30, 31-11/1&6	24		12				27	2		
FLORIDA										
Belle Glade 11/6						6			1	
Quincy 11/5					2	3				
GEORGIA(Counties)										
Spalding 11/9-15	34	5	1		10	5		3		
Tift 11/2-8	37	13	3		23	127		16		1
SOUTH CAROLINA(Counties)										
Oconee 11/3-9	12	6	7			6		3		
Florence 11/3-9	64	19	8		105	42		8		
Charleston 10/29-11/4	15	10	2		31	16		4		

DISTRIBUTION OF ALFALFA WEEVIL



Map compiled in
Plant Pest Survey Section, PPC, ARS, USDA,
from State reports received to November, 1956
and from ARS records

SUMMARY OF INSECT CONDITIONS - 1956

ALABAMA

Reported by F. S. Arant

Highlights: Insect populations in Alabama in 1956 varied from heavy to light. BOLL WEEVIL was more abundant and more destructive than in any year since 1950. Damage to cereal and forage crops was somewhat below normal; however, BLISTER BEETLES were abundant on some legume crops. MEXICAN BEAN BEETLE was present in unusually large numbers on beans and related crops. In general, the population of FRUIT insects was below normal. SOUTHERN PINE BEETLE caused damage in several areas. HOUSE FLY and pest mosquitoes were not serious problems. SCREW-WORM populations were of little concern. SERPENTINE LEAF MINER caused severe damage to vegetables for the first time.

Cereal and Forage Insects: CORN EARWORM (Heliothis zea) caused more loss to cereal and forage crops than any other pest in Alabama in 1956. The damage to corn, including sweet corn, has been estimated at $1,935,450 and to grain sorghum $27,900. Estimates on damage to forage are not available. Adults were present in practically every light trap collection made at three locations in the State. FALL ARMYWORM (Laphygma frugiperda) was important on cereal and forage crops, particularly in the southern part of the State. Damage to corn from this insect has been estimated at $193,545 and to grain sorghum $2,790. Damage to peanuts has been estimated at approximately $250,000. EUROPEAN CORN BORER (Pyrausta nubilalis) was found in one additional county in northern Alabama during the season and is now known to occur in the following counties: Blount, Cherokee, Colbert, Cullman, DeKalb, Etowah, Franklin, Jackson, Lauderdale, Limestone, Lawrence, Madison, Marshall, Morgan and Winston. Damage was primarily to corn and grain sorghum. The estimated damage to corn was $150,000 and to grain sorghum $27,900. CORN ROOTWORMS (Diabrotica undecimpunctata howardi and D. balteata), LESSER CORNSTALK BORER (Elasmopalpus lignosellus) and WIREWORMS attacked corn, grain sorghum, peanuts and other crops in localized areas. Damage to corn was estimated at $354,000 and to peanuts at $450,000. MAIZE BILLBUG (Calendra maidis) damaged corn on river bottom lands in central area to the estimated extent of $32,250. Several species of BLISTER BEETLES, the THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) and several species of LEAFHOPPERS caused damage to forage and cereal crops in the northwestern fourth of the State. ARMYWORM (Pseudaletia unipuncta) was of minor importance.

Insect control measures were practiced on cereal and forage crops to a considerable degree, particularly on sweet corn, grain sorghum, peanuts, alfalfa and soybeans. Savings from control procedures is estimated at approximately $625,000.

Fruit Insects: SAN JOSE SCALE (Aspidiotus perniciosus) infestations were unusually heavy in commercial peach plantings in Blount County.

Apple trees were also infested. The LEAF-FOOTED BUG (*Leptoglossus phyllopus*) was abundant in some areas on peaches. In general, fruit insects in Alabama were not abundant in 1956. PEACH TREE BORER (*Sanninoidea exitiosa*) is present in 50-75 percent of the peach trees in east central Alabama. BLACK PECAN APHID (*Melanocallis caryaefoliae*) was abundant in the fall, causing some damage to 100 percent of the foliage on pecan trees.

Truck Crop Insects: MEXICAN BEAN BEETLE (*Epilachna varivestis*) infestations were extremely heavy. The most severe damage from the insect was in the northern two-thirds of the State. Figures on the dollar value of the damage are not available. SOUTHERN GREEN STINK BUG (*Nezara viridula*) caused severe losses on beans, peas, tomatoes and sweet corn in localized areas of southern Alabama. SQUASH BUG (*Anasa tristis*) was unusually abundant on watermelons over a wide area extending from Chilton County, northward. TOMATO FRUITWORM caused severe damage to tomatoes in some localized areas. EUROPEAN CORN BORER infestations occurred in pimentos; however, plantings of this crop were small. TORTOISE BEETLES and WIREWORMS caused some damage to sweetpotatoes. SERPENTINE LEAF MINER (*Liriomyza* sp.)was more abundant in 1956 than in any other year. Severely infested crops included okra, squash, tomatoes, beans, cantaloupes, pumpkins, and field peas. In some instances, an estimated 80-95 percent of the leaf surface area on the plants was destroyed. Cabbage, potatoes, eggplants and other crops were attacked to a much lesser degree.

Cotton Insects: BOLL WEEVIL (*Anthonomus grandis*) was more abundant in 1956 than in any year since 1950. Damage was general over the State. It is estimated that this insect caused a loss of $16, 000, 000 in Alabama. An estimated $44, 000, 000 worth of cotton was saved through control efforts. BOLLWORM (*Heliothis zea*) and COTTON APHID (*Aphis gossypii*) were of minor importance, but caused some damage. SPIDER MITES were rather general in northern areas on cotton during the latter part of the season and also were responsible for some reduction in yield.

Forest, Ornamental and Shade Tree Insects: SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) caused considerable damage. The insect was active in the Talladega and Bankhead National Forests and on private lands in east central area. A new outbreak of the insect was reported from Butler County in September. BLACK TURPENTINE BEETLE (*Dendroctonus terebrans*) also was rather common. Three species of BARK BEETLES (*Ips avulsus, I. grandicollis, I. calligraphus*) were active over the State. TEA SCALE (*Fiorinia theae*) was probably the most important pest of ornamental plants, particularly in nursery areas. CITRUS WHITEFLY (*Dialeurodes citri*) was also abundant.

Insects Affecting Man and Animals: HORN FLY (*Siphona irritans*) was among the more important pests of domestic animals in 1956. DOG FLEA (*Ctenocephalides canis*) and CAT FLEA (*C. felis*) were also serious problems around some homes and farms. HOUSE FLY (*Musca domestica*) and MOSQUITOES were not present in large numbers and were not serious problems.

Stored Products Insects: RICE WEEVIL (*Sitophilus oryza*) ANGOUMOIS GRAIN MOTH (*Sitotroga cerealella*) and INDIAN-MEAL MOTH (*Plodia interpunctella*) were among the most important stored products insects in 1956. It is estimated that their damage to grain alone was approximately $6,500,000.

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(Continued from p. 1066). and 4,000 feet respectively. Smaller lakes in northern and central Minnesota are reported frozen over with a thin layer of ice.

Precipitation totals were generally moderate to heavy in the snowfall areas, as well as in the Middle Atlantic States, the southern Appalachian Mountains, Tennessee, Arkansas, western Kentucky, southern Indiana and Illinois, and along the coasts of Washington and Oregon. In contrast, much of California, most of Arizona and New Mexico and the western two-thirds of Texas and Oklahoma were without significant amounts, as were Florida and southeastern Georgia. (Summary Supplied by U.S. Weather Bureau).